

12th Biennial Conference of the International Society for Ecological Economics
ISEE 2012 Conference
"Ecological Economics and Rio+20: Challenges and Contributions for a Green Economy"
16-19 June 2012, Rio de Janeiro, Brazil

Conference theme: Environmental Justice, Ethics and Values

Sub-theme: Balancing nature: people, biodiversity and resilience

Title: The difficult realization of sustainable development: new insights from a cross-cutting combination between the Critical Natural Capital theory and the Sen's capability approach.

Authors : Jérôme Pelenc¹, Didier Bazile², Jorge Negrete³, Patricia Fraile⁴, Sébastien Velut⁵ and Jean Luc Dubois⁶.

Keywords: critical natural capital, strong sustainability, human development, capability approach, biosphere reserve

Introduction

Twenty years after the first Rio Earth Summit, sustainable development is not yet a reality for the majority of people. This paper presents the main results of a field study which was conducted in order to bring empirical facts to the theoretical construction of Pelenc and Dubois (2011) who have established a framework to assess human development in a strong sustainability perspective. This framework is about combining the Sen's capability approach with the Critical Natural Capital (CNC) theory. This combination allows envisaging criticality as an emergent property of ecological and human value systems defining the CNC through important ecosystem services related to people's capabilities. In this vein, criticality is no

¹ University of Paris 3 Sorbonne Nouvelle and Fontainebleau-Gâtinais Biosphere Reserve

² Agricultural Research Centre for International Development (CIRAD), UR GREEN, TA C-47/F, 34398 Montpellier cedex 5, France and Instituto de Geografia / PUC Valparaíso, Avenida Brasil 2241, Valparaíso, Chile.
didier.bazile@cirad.fr

³ Chacun mettra son affiliation

⁴

⁵ Chacun mettra son affiliation

⁶ Chacun mettra son affiliation

longer restricted to the provision of scientific knowledge on ecological systems neither to the issue of scarce resources distribution; however, it also includes freedom of choice. According to Pelenc and Dubois (2011) the capacity of people to be an agent of sustainable human development relies on the following parameters and their combination; access to *ecosystem services* and *substitutable resources* (money, manufactured capital...), *entitlements* (property rights, political and economic rights etc.), *internal* (health, human capital etc.) and *external* (social norms, institutions, etc.) *conversion factors* and *personal values* which guide the choice between possible realizations (i.e. potential functionings).

We conducted this field study in two peri-urban Biosphere Reserves (one in the Paris region and the other one in the macro region of Santiago-Valparaiso in Chile). Biosphere reserves are defined by Unesco as learning sites for sustainable development where new and optimal practices to manage nature and human activities should be tested and demonstrated through participative governance. Therefore, they constitute relevant places to test new ecological economics methods.

The goal of our empirical research was to understand social perceptions of ecosystem services and related capabilities structures (constraints and opportunities of the different stakeholders) in order to raise the relevant information to help defining CNC of these two biosphere reserves and to identify the barriers people are facing to have sustainable functionings (i.e. practices or lifestyles).

Material and methods

Four categories of stakeholders who deal with ecosystem services have been met: managers of protected areas which constitute the core zones of the biosphere reserve; conventional and innovative entrepreneurs (tourism, agriculture, education, etc.); local and regional planning officer and representative from civil society and local community groups. A sociological survey was conducted (for each sites, 30 key stakeholders were met individually) and four workshops (4 France / 4 Chile) with the different categories of stakeholders were organized in the two biosphere reserves during the 2009-2011 period.

The interview was structured in three steps: (i) identification and assessment of the state of conservation of the ecosystem services valued by the respondent (ii) aspirations of the respondent regarding the development of his activity and identification of the barriers his facing in order to have sustainable use of ecosystem services (iii) nature of the relationships of the respondent with others stakeholders regarding ecosystem services management and more broadly sustainable development.

Results

This method enabled us to reach the following results: (i) identification of the set of critical ecosystem services which constitute the CNC of the two sites. The stakeholder surveys by questionnaire also shed light on the undervalued ecosystem services which could be a source development if they would be used sustainably; (ii) identification of the barriers interviewed stakeholders (including those working for institution) are facing to have sustainable functionings in terms capabilities; (iii) to shed light on the social situation of actors and socio-ecological inequalities. Notably innovative actors feel isolated and discriminated, if there is not a lot of declared conflicts between the different stakeholders there are plenty of latent conflicts; (iv) the work done brought relevant insights to characterise the tensions people are experiencing when the value represented by sustainable development conflicts with other values that underpin their daily life practices; (vi) finally, this sociological survey allowed us to set up several categories of stakeholders according to their degree of freedom to be sustainable.

Discussion

Although, several stakeholders recognize the critical state of the ecosystem services they rely on, the model of development they value remains the one which is the cause of this ecological degradation. According to them, it is because there is no other real alternative of development possible. This should be the goal of the biosphere reserve to foster the existence of real alternative of sustainable development for people.

As far as, innovative actors are inventing tomorrow lifestyles they practices do not fit established institutional frameworks. Some of them choose to stay out the system to do not see their freedom reduced and to be able to maintain their sustainable lifestyle. Others want to integrate the system to make recognize their innovation but there is no space designed for it.

Given the rapid socio-environmental changes, one can ask if the inertia which characterizes institutional frameworks will not be too strong to allow on time societal adaptations. In this respect the comparison between two countries one developed with strong institutional framework (France) and another one which is an emerging country largely unregulated (Chile) brings interesting insights to discuss this issue.

Selected references:

- Ballet, J, Bazin, D, Dubois J.-L, Mahieu F.-R, 2011, A note on sustainability economics and the capability approach, *Ecological Economics* 70 (2011) 1831-1834.
- De Groot R., Van der Perk J., Chiesura A. and van Vliet A., 2003, "Importance and threat as determining factors for criticality of natural capital," *Ecological Economics* 44, pp. 187–204.
- Ekins P., Simon S., Deutsch L., Folke C. and De Groot, R., 2003, "A framework for the practical application of the concepts of critical natural capital and strong sustainability", *Ecological Economics* 44, pp.165–185.
- Lehtonen M., 2004, « The environmental–social interface of sustainable development: capabilities, social capital, institutions», *Ecological Economics* 49 (2004) 199– 214
- Neumayer E., 2010, "Human development and sustainability", Research Paper 2010/05, Human Development Report, United Nations Development Programme, New York.
- Pelenc, J and Dubois, J L., 2011. Relating Capability and Sustainability: The Role of Critical Natural Capital for Sustainable Human Development. In Crabtree A, Tiwari, M (eds), "Capability and Sustainability", Palgrave MacMillan (In corrected proof).
- Pelenc, J., 2010. "Crossing Sen's capability approach with critical natural capital theory. Toward a new perspective to reconcile human development and nature conservation goals". Paper presented at the ISEE 2010 conference, session Needs, Capabilities and Sustainable Development.
- Rauschmayer F, Omann I, Frühmanet J. (eds), 2011, *Sustainable development : Capabilities, needs and well-being*. Routledge Studies in Ecological Economics, London.
- Sen A.K., 1999, *Development as Freedom*, Alferd Knopf. Inc., New York